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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,087	06/26/2003	Richard Tkachuk	MSFT-1736/302204.1	5373

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EXAMINER	
KIM, PAUL	

ART UNIT	PAPER NUMBER
2161	

DATE MAILED: 05/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/607,087	TKACHUK ET AL.	
	Examiner	Art Unit	
	Paul Kim	2161	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 March 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,8-12 and 14-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,8-12 and 14-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 March 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

SAM RIMELL
PRIMARY EXAMINER

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7 April 2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is responsive to the following Communication: Amendment filed on 13 March 2006.

Response to Amendment

2. Claims 1-5, 8-12, and 14-18 are pending and present for examination.

3. Claims 1-3, 8-10, and 14-16 have been amended.

4. Claims 6-7, 13, and 19 have been cancelled.

5. Claims 1, 8, and 14 are independent.

Drawings

6. In view of Applicant's Amendment's to the Drawings, the previous objections to the Drawings are withdrawn.

7. The drawings were received on 13 March 2006. These drawings are acceptable.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. **Claims 1, 4-5, 8, 11-12, 14, and 17-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Deshpande et al (U.S. Patent No. 6,601,062, hereinafter referred to as DESPHANDE), filed on 27 June 2000, and issued on 29 July 2003, in view of Lore et al (USPGPUB 2002/0099691, hereinafter referred to as LORE), filed on 24 June 1998, and published on 25 July 2002.

DESHPANDE and LORE teach the limitations of claims 1, 4-5, 8, 11-12, 14 and 17-18 for the reasons stated below.

10. **As per independent claims 1 and 14**, DESPHANDE, in combination with LORE, discloses:

A method for calculating a measure expression over a selected range of attributes, the measure expression including relationship between a first measure and a second measure, the first measure corresponding to a first data type and the second measure corresponding to a second data type, the relationship defined by an arithmetic operation, the method comprising:

receiving a request {See DESHPANDE, Figure 2; and col. 5, lines 16-17, wherein this reads over "the OLAP system accepting a query from a user"} to calculate the measure expression over the selected range of attributes;

responsive to receiving the request, querying a data store to retrieve a first data set ~~retrieving a first cache~~ corresponding to the first data type {See DESPHANDE, Figure 2; col. 5, lines 32-39, wherein this reads over "OLAP system determining whether it is possible to answer at least a portion of the query from the RDBMS" and "the OLAP system fetching the multi-dimensional data from the RDBMS"}, the first data set ~~cache~~ including only data for the first measure over the selected range of attributes {See LORE, Para. [0006], wherein this reads over "Dimension entries are grouped into different categories within a level based depending on their attributes at that level of summarization"};

storing the first data set in a first cache {See DESPHANDE, Figure 2; col. 5, lines 40-42, wherein this reads over "the OLAP system storing the multi-dimensional data used to answer the query into the cache"};

generating a first index from the first cache, the first index including data for the first measure over the selected range of attributes common to the first data type and the second data type {See LORE, Abstract, wherein this reads over "the aggregate index from each dimension"};

responsive to receiving the request, querying a data store to retrieve a first data set ~~retrieving a second cache~~ corresponding to the second data type {See DESPHANDE, Figure 2; col. 5, lines 32-39, wherein this reads over "OLAP system determining whether it is possible to answer at least a portion of the query from the RDBMS" and "the OLAP system fetching the multi-dimensional data from the RDBMS"}, the second data set ~~cache~~ including data for the second measure over the selected range of attributes;

storing the second data set in a second cache {See DESPHANDE, Figure 2; col. 5, lines 40-42, wherein this reads over "the OLAP system storing the multi-dimensional data used to answer the query into the cache"};

generating a second index from the second cache, the second index including data for the second measure over the selected range of attributes common to the first data type and the second data type {See LORE, Abstract, wherein this reads over "the aggregate index from each dimension"};

performing the arithmetic operation on the data {See LORE, Paras. [0062]-[0064], wherein this reads over "any type for which functions like Average, Maximum, Count, and Total can be

applied"} for the first measure from the first index and the data for the second measure from the second index to achieve resulting data; and

aggregating the resulting data over the selected range of attributes common to the first data type and the second data type {See LORE, Para. [0015], wherein this reads over "The data will need to be sorted based on the grouping of the attribute values of the sorted dimension. All aggregations are performed in one phase. When the sorted attributes in the sorted dimension change, it is known that the aggregates involving these attributes are complete, and these aggregates are dumped out"; and Para. [0064], wherein this reads over "[e]ach measure may have several aggregation types applied to it (average and total, for instance)"}.

DESHPANDE discloses a method wherein the OLAP system accepts a query from a user and then, using the query, fetches data from a RDBMS. Furthermore, while DESPHANDE does not specifically disclose the use of attributes and measures, LORE discloses the common use of attributes and measures within an OLAP system. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention suggested by DESHPANDE by combining it with the invention disclosed by LORE.

One of ordinary skill in the art would have been motivated to do this modification in order to select only data for specific measures of selected ranges of attributes in after the request is received.

Additionally, DESPHANDE discloses a method for storing data used to answer the query into the cache.

One of ordinary skill in the art would have been motivated to do this modification so that data which is repeatedly used may be accessed quickly from the cache instead of having to once again search and retrieve data from a data store.

11. **As per dependent claims 4, 11, and 17**, DESPHANDE, in combination with LORE, discloses:

The method of claim 1, wherein generating the first index comprises generating the first index {See LORE, Abstract, wherein this reads over "the aggregate index from each dimension"} including data for the first measure aggregated according to attributes specific to the first data type {See LORE, Para. [0015], wherein this reads over "The data will need to be sorted based on the grouping of the attribute values of the sorted dimension. All aggregations are performed in one phase. When the sorted attributes in the sorted dimension change, it is known that the aggregates involving these attributes are complete, and these aggregates are dumped out"; and Para. [0064], wherein this reads over "[e]ach measure may have several aggregation types applied to it (average and total, for instance)"}.

12. **As per dependent claims 5, 12, and 18**, DESPHANDE, in combination with LORE, discloses:

The method of claim 1, wherein generating the second index comprises generating the second index {See LORE, Abstract, wherein this reads over "the aggregate index from each dimension"} including data for the second measure aggregated according to attributes specific to the second data type {See LORE, Para. [0015], wherein this reads over "The data will need to be sorted based on the grouping of the attribute values of the sorted dimension. All aggregations are performed in one phase. When the sorted attributes in the sorted dimension change, it is known that the aggregates involving these attributes are complete, and these aggregates are dumped out"; and Para. [0064], wherein this reads over "[e]ach measure may have several aggregation types applied to it (average and total, for instance)"}.

13. **As per independent claim 8**, DESPHANDE, in combination with LORE, discloses:

A system for calculating a measure expression over a selected range of attributes, the measure expression including a relationship between a first measure and a second measure, the first measure corresponding to a first data type and the second measure corresponding to a second data type, the relationship defined by an arithmetic operation, the method comprising:

a ~~database~~ data store {See DESPHANDE, Figure 1} for storing a first data table including data for the first data type and a second data table including data for the second data type;

a processor {See LORE, col. 20, lines 19-29, wherein this reads over "a dual processor"} for performing the following steps:

receiving a request {See DESHPANDE, Figure 2; and col. 5, lines 16-17, wherein this reads over "the OLAP system accepting a query from a user"} to calculate the measure expression over the selected range of attributes;

responsive to receiving the request, querying a data store to retrieve a first data set ~~retrieving a first cache~~ corresponding to the first data type {See DESPHANDE, Figure 2; col. 5, lines 32-39, wherein this reads over "OLAP system determining whether it is possible to answer at least a portion of the query from the RDBMS" and "the OLAP system fetching the multi-dimensional data from the RDBMS"}, the first data set ~~cache~~ including only data for the first measure over the selected range of attributes {See LORE, Para. [0006], wherein this reads over "Dimension entries are grouped into different categories within a level based depending on their attributes at that level of summarization"};

storing the first data set in a first cache {See DESPHANDE, Figure 2; col. 5, lines 40-42, wherein this reads over "the OLAP system storing the multi-dimensional data used to answer the query into the cache"};

generating a first index from the first cache, the first index including data for the first measure over the selected range of attributes common to the first data type and the second data type {See LORE, Abstract, wherein this reads over "the aggregate index from each dimension"};

responsive to receiving the request, querying a data store to retrieve a first data set ~~retrieving a second cache~~ corresponding to the second data type {See DESPHANDE, Figure 2; col. 5, lines 32-39, wherein this reads over "OLAP system determining whether it is possible to answer at least a portion of the query from the RDBMS" and "the OLAP system fetching the multi-dimensional data from the RDBMS"}, the second data set ~~cache~~ including data for the second measure over the selected range of attributes;

storing the second data set in a second cache {See DESPHANDE, Figure 2; col. 5, lines 40-42, wherein this reads over "the OLAP system storing the multi-dimensional data used to answer the query into the cache"};

generating a second index from the second cache, the second index including data for the second measure over the selected range of attributes common to the first data type and the second data type {See LORE, Abstract, wherein this reads over "the aggregate index from each dimension"};

performing the arithmetic operation on the data {See LORE, Paras. [0062]-[0064], wherein this reads over "any type for which functions like Average, Maximum, Count, and Total can be applied"} for the first measure from the first index and the data for the second measure from the second index to achieve resulting data; and

aggregating the resulting data over the selected range of attributes common to the first data type and the second data type {See LORE, Para. [0015], wherein this reads over "The data will need to be sorted based on the grouping of the attribute values of the sorted dimension. All aggregations are performed in one phase. When the sorted attributes in the sorted dimension change, it is known that the aggregates involving these attributes are complete, and these aggregates are dumped out"; and Para. [0064], wherein this reads over "[e]ach measure may have several aggregation types applied to it (average and total, for instance)"}.

DESHPANDE discloses a method wherein the OLAP system accepts a query from a user and then, using the query, fetches data from a RDBMS. Furthermore, while DESPHANDE does not specifically disclose the use of attributes and measures, LORE discloses the common use of attributes and measures within an OLAP system. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention suggested by DESHPANDE by combining it with the invention disclosed by LORE.

One of ordinary skill in the art would have been motivated to do this modification in order to select only data for specific measures of selected ranges of attributes in after the request is received.

Additionally, DESPHANDE discloses a method for storing data used to answer the query into the cache.

One of ordinary skill in the art would have been motivated to do this modification so that data which is repeatedly used may be accessed quickly from the cache instead of having to once again search and retrieve data from a data store.

14. **Claims 2-3, 9-10, and 15-16** are rejected under 35 U.S.C. 103(a) as being unpatentable over DESHPANDE, in view of LORE, as applied to claims 1, 4-5, 8, 11-12, 14 and 17-18 above, and in further

view of Hill et al (U.S. Patent No. 6,453,321, hereinafter referred to as HILL), filed on 11 February 11, 1999, and issued on 17 September 2002.

DESHPANDE and LORE teach the limitations of claims 1, 4-5, 8, 11-12, 14 and 17-18 for the reasons stated above.

DESPHANDE and LORE differ from the claimed invention in that they fail to specifically disclose a method for querying a data store through a single access to a data table (claims 2-3, 9-10, and 15-16).

15. **As per dependent claims 2, 9 and 15,** DESPHANDE, in combination with LORE and HILL, discloses:

> The method of claim 1, wherein ~~retrieving~~ querying the data store to retrieve first data set ~~cache~~ comprises ~~retrieving~~ querying the data store to retrieve the first data set ~~cache~~ {See DESPHANDE, Figure 2; col. 5, lines 32-39, wherein this reads over "OLAP system determining whether it is possible to answer at least a portion of the query from the RDBMS" and "the OLAP system fetching the multi-dimensional data from the RDBMS"} through a single access to a first data table {See HILL, col. 1, lines 54-67, wherein this reads over "[t]he application retrieves data from these tables by issuing a database query"}.

While DESPHANDE and LORE fail to specifically disclose retrieval of a data set through a single access, HILL discloses an application which retrieves data by issuing a database query. It would have been obvious to one or ordinary skill in the art at the time the invention was made that a query specifying certain retrieval parameters would have been able to retrieve the desired data set through a single access or pass to a data table. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the inventions suggested by DESHPANDE and LORE by combining it with the invention disclosed by HILL.

One of ordinary skill in the art would have been motivated to do this modification in order to efficiently use a single access to a data table to retrieve a data set.

16. **As per dependent claims 3, 10, and 16,** DESPHANDE, in combination with LORE and HILL, discloses:

> The method of claim 1, wherein ~~retrieving~~ querying the data store to retrieve the second data set ~~cache~~ {See DESPHANDE, Figure 2; col. 5, lines 32-39, wherein this reads over "OLAP system determining whether it is possible to answer at least a portion of the query from the RDBMS" and "the OLAP system fetching the multi-dimensional data from the RDBMS"} comprises ~~retrieving~~ the second

~~cache~~ through a single access to a second data table {See HILL, col. 1, lines 54-67, wherein this reads over "[t]he application retrieves data from these tables by issuing a database query"}.

While DESPHANDE and LORE fail to specifically disclose retrieval of a data set through a single access, HILL discloses an application which retrieves data by issuing a database query. It would have been obvious to one or ordinary skill in the art at the time the invention was made that a query specifying certain retrieval parameters would have been able to retrieve the desired data set through a single access or pass to a data table. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the inventions suggested by DESHPANDE and LORE by combining it with the invention disclosed by HILL.

One of ordinary skill in the art would have been motivated to do this modification in order to efficiently use a single access to a data table to retrieve a data set.

Response to Arguments

17. Applicant's arguments with respect to claims 1, 8, and 14 have been considered but are moot in view of the new ground(s) of rejection.

18. **As per claim(s) 2-5, 9-12, and 15-18**, Applicant has not asserted any specific arguments in response to the rejections of the claims. Therefore, the rejections of claims 2-5, 9-12, and 15-18 are sustained because Applicant has not traversed nor argued the rejections contained in the prior Office Action, dated 13 December 2005.

Conclusion

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date

of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Kim whose telephone number is (571) 272-2737. The examiner can normally be reached on M-F, 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on (571) 272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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